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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**Endangered and Threatened Wildlife  
and Plants; Endangered Status for  
*Warea Amplexifolia* (Wide-leaf Warea)**

**AGENCY:** Fish and Wildlife Service,  
Interior.

**ACTION:** Final rule.

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**SUMMARY:** The Service determines a plant in the Mustard family (Brassicaceae), *Warea amplexifolia* (wide-leaf warea), to be an endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended. Critical habitat is not being determined. This species occurred historically in a small region of central Florida in Lake

County, western Orange County, extreme northwestern Osceola County, and northern Polk County. It is now limited to only four sites in Lake and Polk Counties. Habitat at all of the other sites at which the species was known to occur has been destroyed by intensive agricultural (citrus) and urban developments. This rule implements the Federal protection and recovery provisions afforded by the Act for this plant.

**DATES:** The effective date of this rule is May 29, 1987.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the Endangered Species Field Station, U.S. Fish and Wildlife Service, 2747 Art Museum Drive, Jacksonville, Florida 32207.

**FOR FURTHER INFORMATION CONTACT:** Mr. David J. Wesley, Endangered Species Field Supervisor, at the above address (904/791-2580 or FTS 946-2580).

#### SUPPLEMENTARY INFORMATION:

##### Background

*Warea amplexifolia* was originally described by Thomas Nuttall in 1822 from a specimen collected in central peninsular Florida by N.A. Ware. Nuttall at first placed this plant in the genus *Stanleya* but in 1834 transferred it to the genus *Warea* and provided an amplified description that accommodated specimens from the Florida panhandle. The panhandle specimens were later recognized as a distinct species, *Warea sessilifolia*, by Nash. Shinnars (1962) proposed a new name for the peninsular species, *Warea auriculata*, but other reviewers (Payson 1922, Channel and James 1964, Judd 1980) consider *Warea amplexifolia* to be the correct name. The plant has been collected infrequently during the years since the early 1800's, probably because of its extremely restricted geographical range. It is now known to occur at only four localities in Lake and Polk Counties, Florida.

*Warea amplexifolia* is in the mustard family (Brassicaceae). It is an erect herb growing to a height of about 0.8 meters (3 feet), with slender branching stems arising from an elongate tap root. The leaves are alternately arranged along the stem and are generally heart-shaped. They are about 8 millimeters (0.3 inch) to about 30 millimeters (1.3 inches) long and from about 4 millimeters (0.2 inch) to nearly 20 millimeters (1.0 inch) wide, with conspicuous basal lobes which clasp the stem. The flowers are showy and are borne in small, rounded, puff-like clusters at the ends of the branches. Each flower has 4 pale purple petals with a rounded upper portion, an

elongated stalk-like lower portion, and 6 stamens which protrude above the petals. The pistil is narrowly cylindrical and is borne at the end of a long stalk. The fruit is a dry, thin, curved pod of about 30 millimeters (1.3 inch) to about 75 millimeters (3.0 inches) in length which is borne at the end of a 9-14 millimeter (0.3-0.5 inch) long stalk. The pod (silique) eventually splits lengthwise into two portions which spread apart revealing a thin central partition around which the small brown seeds are attached.

*Warea amplexifolia* is occasionally confused with the three other species of the genus. It is distinguished from *Warea sessilifolia* by its conspicuously heart-shaped leaves and lighter purple flowers; it is easily separated from *Warea carteri* and *Warea cuneifolia* by its stalkless and auriculate-based leaves. Keys to the species of *Warea* are given by Payson (1922), Small (1933) and Channel and James (1964).

*Warea amplexifolia* is a summer annual herb, with showy flowers, visited by various Hymenoptera (bees) and Lepidoptera (butterflies). Reproduction is exclusively sexual, by the production of seeds which are probably released from the pods by wind action. The small seeds generally fall near the parent plant. No information exists on the yearly fluctuation in seed production, seed viability, germination requirements, or the extent of soil storage. Flowering occurs from mid-August to early October, and fruiting occurs from late September to mid-November. Senescence (old age) occurs just before the fruit matures; the population overwinters as seeds.

The following information is from Judd (1980). *Warea amplexifolia* is endemic to the Lake Wales ridge of central peninsular Florida. It was known to occur in Lake County, Orange County, Osceola County, and Polk County, but is now confined to only Lake and Polk Counties. The Lake Wales ridge is an elongated area of raised and usually dry soils, with elevations up to about 100 meters (300 feet), extending from central Highlands County northward and gradually disappearing in southern Marion County. The region supports dry forest of *Pinus palustris* (long-leaf pine) or *Pinus clausa* (sand pine), and various communities dominated by scrubby oaks such as *Quercus laevis* (turkey oak), *Quercus geminata* (sand live oak), *Quercus incana* (bluejack oak), *Quercus myrtifolia* (myrtle oak), and *Quercus chapmanii* (Chapman's oak), or *Ceratiola ericoides* (Florida rosemary). *Warea amplexifolia* is restricted to *Pinus palustris* and scrubby oak forest. Most of the Lake Wales ridge has

undergone intensive agricultural development and now supports extensive citrus groves. The remaining portion is under extremely heavy pressure from agricultural and urban development. These developments have resulted in a loss of habitat for *Warea amplexifolia* and threaten the survival of the species at the four sites where it still occurs in Lake and Polk Counties.

Section 12 of the Endangered Species Act of 1973 directed the Secretary of the Smithsonian Institution to prepare a report on plants considered to be endangered, threatened, or extinct. The Secretary of the Smithsonian presented this report (House Document No. 94-51) to Congress on January 9, 1975. On July 1, 1975, the Service published a notice in the *Federal Register* (40 FR 27823) of its acceptance of the Smithsonian Report as a petition within the context of section 4(c)(2) of the Act (petition acceptance provisions are now contained in section 4(b)(3)(A) of the Act, as amended). On June 16, 1976, the Service published a proposed rule in the *Federal Register* (41 FR 24523) to determine approximately 1,700 vascular plant species recommended by the Smithsonian Report to be endangered species pursuant to section 4 of the Act. *Warea amplexifolia* was included in the Smithsonian Report, the July 1, 1975, notice, and the June 6, 1976, proposal.

The 1978 Endangered Species Act Amendments required that all proposals over 2 years old be withdrawn, except that a 1-year grace period was given to proposals already over 2 years old. On December 10, 1979, the Service published a notice of withdrawal of the June 6, 1976, proposal, along with four other proposals which had expired (44 FR 70796). On December 15, 1980, the Service published a revised notice of review in the *Federal Register* (45 FR 82480); *Warea amplexifolia* was included as a category-1 species (species for which data in the Service's possession indicate listing is warranted). A supplement to the Notice of Review (48 FR 53640, November 28, 1983) treated *Warea amplexifolia* as a category-2 candidate (species for which data in the Service's possession indicate listing is possibly appropriate). The 1985 updated review of plant candidates (50 FR 39526, September 27, 1985) maintained *Warea amplexifolia* in category 2. The reclassification from category-1 to category-2 was based on a report of the species being found in Alabama, now known to be incorrect.

Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make findings on certain pending petitions within 12

months of their receipt. Section 2(b)(1) of the Act's Amendments of 1982, further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This was the case for *Warea amplexifolia* because of the acceptance of the 1975 Smithsonian Report as a petition. On October 13, 1983, October 12, 1984, and October 11, 1985, the Service made 12-month findings that the petition to list *Warea amplexifolia* was warranted, and that although pending proposals had precluded its proposal, expeditious progress was being made to add other species to the list. Biological data, supplied by Judd (1980) and supplemented by field investigations in 1985 by the staff of the Jacksonville Endangered Species Field Station fully supported a listing of *Warea amplexifolia* as endangered. The proposed rule, published on May 16, 1986, was based primarily on Judd's biological data, and constituted the next 12-month finding requirement of section 4(b)(3)(B) of the Act. All four sites listed by Judd as containing populations of *Warea amplexifolia* were revisited in 1985. Three of these four sites were found to still contain habitat which could support the species. The fourth site was lost to commercial development since Judd completed his survey. An additional site was discovered in 1985 on the grounds of the Bok Tower Gardens, Lake Wales, Polk County.

#### Summary of Comments and Recommendations

In the May 16, 1986, proposed rule (51 FR 18010) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices that invited general public comments were published in the *Lakeland Ledger* and the *Lake County Citizen*. Five comments were received in response to the proposal, all of which fully concurred with the listing of *Warea amplexifolia* as an endangered species. The comments were from the Florida Game and Fresh Water Fish Commission, the Florida Department of Agriculture and Consumer Services, the Florida Department of Natural Resources (Headquarters and District V, Division of Recreation and Parks), and Mr. Richard Spotts of Sacramento, California.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Warea amplexifolia* should be classified as an endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Warea amplexifolia* (wide-leaf warea) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* This has been, and continues to be, the primary threat to the survival of *Warea amplexifolia*. The species is known at present from only the following three sites of Judd (1980), all of which were still extant in 1985, and one additional site reported to the Fish and Wildlife Service by Kent Perkins, University of Florida Herbarium, in personal communication of November 14, 1985:

1. **Leesburg Site (Lake County)**—A population of ca. 250 plants occupies a woodlot of roughly 1 acre. The woodlot is surrounded by development (urban and citrus), but is now part of the Lake Griffin State Recreation Area.

2. **Clermont Site (Lake County)**—About 700 plants (the largest population known) inhabit a woodland of roughly 10 acres. The woodland is privately owned (by a mining company) and is surrounded by orange groves.

3. **Haines City Site (Polk County)**—About 200 plants inhabit a privately owned woodland of about 1 to 2 acres in size surrounded by orange groves.

4. **Lake Wales Site (Polk County)**—A population of about 24 plants was discovered in 1985 at the Pine Ridge Reserve on the grounds of the Bok Tower Gardens. This area is about 50 acres in size and is a remnant of the original longleaf pine vegetation. It is managed by the Gardens to preserve its flora.

The species is known or assumed extirpated from four sites in Orange County and one site in both Lake and Osceola Counties within its historical range (Judd 1980). Judd further noted that very few areas of upland, dry, open *Pinus palustris* woods exist at the present time in the area of well-drained white sandy soil from Leesburg to Haines City. This area is now covered with citrus groves, with the few

remaining wooded areas occupying mainly lowland sites. A search of the Clermont, Haines City, and Leesburg areas revealed no additional localities for *Warea amplexifolia*.

Thus, of the 10 sites where the species has been known to occur historically, six have already been destroyed by agricultural and urban development. The remaining four sites are small, and three are privately-owned; two of these are very vulnerable to development pressures. Altogether, fewer than 1,200 plants are known to survive on less than 65 acres of land. All present populations are surrounded by citrus groves and/or urban developments (Orlando, Tavares, Leesburg, etc.).

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* According to Judd (1980), *Warea amplexifolia* has potential as a cultivated ornamental because of its showy, light purple flowers clustered in dense "puff-like" terminal racemes. The plant is striking in full bloom, and is highly vulnerable to picking by vandals and curiosity seekers.

C. *Disease or predation.* Not applicable.

D. *The inadequacy of existing regulatory mechanisms.* *Warea amplexifolia* was listed as endangered in 1985 under the Preservation of the Native Flora of Florida Law (Section 581.185 of the Florida Statutes). This Florida law regulates taking, transport, and the sale of plants, but it does not provide habitat protection.

E. *Other natural or manmade factors affecting its continued existence.* Because this species is an annual, and extremely restricted in both range and numbers, it is very vulnerable to disturbance and natural disasters. The failure of any one of the four remaining populations to set seed in the fall could result in the extirpation of that population and a further reduction in the already small genetic variability of the species.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Warea amplexifolia* as endangered. The species is extremely limited in range and numbers, and occurs mainly on private lands in rapidly growing areas. A failure to list this species, or to list it as threatened, would not recognize the fact that available data indicate it is in danger of extinction throughout its entire range. Critical habitat is not being determined for *Warea amplexifolia* for

the reasons discussed in the following section.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for this species at this time. As stated under Factor B in the "Summary of Factors Affecting the Species," *Warea amplexifolia* is a striking plant when in bloom, and has a potential for ornamental cultivation. In addition, its showy, light purple flowers are conspicuous in the field, and it would be a great temptation for flower lovers or for vandals to pick them. Since there are only four remaining populations of this species, any molestation of them by curiosity seekers or vandals could result in their extinction. Therefore, a determination of critical habitat would provide an additional threat to the species by supplying precise information to the general public on where the species may be found. Because of this, the Service believes that a determination of critical habitat is not prudent for *Warea amplexifolia*. Protection of this species' habitat will be addressed through the recovery process and through the Section 7 jeopardy standard.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being

designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Since all presently known sites for *Warea amplexifolia* are on private or State owned land, there will be no effect from the above requirement unless a private action requires some Federal action, such as funding or permits.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export an endangered plant, transport it in interstate or foreign commerce in the course of commercial activity, sell or offer it for sale in interstate or foreign commerce, or to remove it from areas under Federal jurisdiction and reduce it to possession. *Warea amplexifolia* is not known at present from any Federal lands. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits will be sought or issued for *Warea amplexifolia*, since it is not in cultivation or common in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the

Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

#### References Cited

- Channel, R.B., and C.W. James. 1964. Nomenclatural and taxonomic corrections in *Warea* (Cruciferae). *Rhodora* 66:18-26.
- Judd, W.S. 1980. Status report on *Warea amplexifolia*. Unpublished report prepared for U.S. Fish and Wildlife Service, Jacksonville, Florida. 22 pp.
- Nuttall, T. 1822. A catalogue of a collection of plants made in East-Florida, during the months of October and November, 1821 by A. Ware, Esq. *Amer. Jour. Sci.* 5:297.
- Nuttall, T. 1834. A description of some of the rarer or little known plants indigenous to the United States, from the dried specimens in the herbarium of the Academy. *Jour. Acad. Nat. Sci. Philadelphia* 7:83.
- Payson, E.B. 1922. A monographic study of *Thelypodium* and its immediate allies. *Ann. Missouri Bot. Gard.* 9:233-324.
- Shinners, L.H. 1962. *Warea auriculata* instead of *W. amplexifolia* of Small (Cruciferae). *Rhodora* 66:18-26.
- Small, J.K. 1933. *Manual of the Southeastern Flora*. Privately published, New York, N.Y., pp. 573-574.

#### Author

The primary author of this final rule is John L. Paradiso, Jacksonville Endangered Species Field Station, 2747 Art Museum Drive, Jacksonville, Florida 32207 (904/791-2580 or FTS 946-2580).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

#### Regulation Promulgation

#### PART 17—[AMENDED]

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations is amended, as set forth below:

1. The authority citation for Part 17 continues to read as follows:

**Authority:** Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. Amend § 17.12(h) by adding the following in alphabetical order under Brassicaceae, to the List of Endangered and Threatened Plants:

#### § 17.12 Endangered and threatened plants.

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Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Brassicaceae—Mustard family.	.	.	.	.	.	.
<i>Warea amplexifolia</i>	Wide-leaf warea	U.S.A. (FL)	E	266	NA	NA

Dated: April 3, 1987.

Susan Recce,

Assistant Secretary for Fish and Wildlife and  
Parks.

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BILLING CODE 4310-55-M